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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,259	01/18/2002	Massimo Grisoni	70439	1242
23872	7590	10/19/2004	EXAMINER	
MCGLEW & TUTTLE, PC 1 SCARBOROUGH STATION PLAZA SCARBOROUGH, NY 10510-0827			DEBERADINIS, ROBERT L	
			ART UNIT	PAPER NUMBER
			2836	

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/053,259

Applicant(s)

GRISONI, MASSIMO

Examiner

Robert DeBeradinis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

The reply filed 6/29/04 consists of cancellation of claims 1-20, addition of new claims 21-41, submission of substitute specification.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21-24, 27, 29, 30-35, 37-39, 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over YORK 3,851,218 in view of ISHIKAWA 4,801,828.

Regarding claims 21, 22, 39.

YORK discloses a direct solid state circuit breaker.

YORK is silent as to the physical structure of the circuit breaker wherein the physical structure consists of a first copper support and a second copper support.

ISHIKAWA discloses an electronic solid state switch for current switching from an input circuit (terminal 2) powered by a voltage source to an output circuit (terminal 3) connected to a load, the electronic solid state switch having output terminals;

A first copper support connected to the switch and connectable to the input circuit (figure 1, connector members 33, 34);

A printed circuit board connected to, and for control of, the electronic solid state switch (circuit boards 27, 28, 29);

A second copper support connector to said output terminals and to be connected to the output circuit (terminal 3).

It would have been obvious to one having ordinary skill in the art at the time of this invention to construct the solid state circuit breaker disclosed by YORK to have the same packaging design as disclosed by ISIKAWA. The motivation would be to provide a small package to handle large currents.

Regarding claim 23.

YORK in view of ISHIKAWA discloses a solid state current distribution system according to claim 21.

YORK in view of ISHIKAWA does not disclose wherein the output terminals are soldered to the second copper support by means of U shaped leads.

The Examiner takes official notice. Packaging of power devices is well known.

It would have been obvious to one having ordinary skill in the art at the time of this invention to modify the second copper support to have a U shaped lead. The motivation would be to increase the stiffness of the lead.

Regarding claims 24, 29, 35, 37.

YORK in view of ISHIKAWA disclose a solid state current distribution system according to claim 21.

YORK discloses wherein the printed circuit board includes an electronic circuit with a first selector to be set to program a range of current (R16) and a second selector to be set to program a time delay (C31) to be used if loads have inductive component. Regarding claim 27.

YORK in view of ISHIKAWA disclose a solid state current distribution system according to claim 21 wherein the system is configured to be a self contained module. Regarding claims 30, 31, 32, 34, 38, 41.

YORK in view of ISHIKAWA disclose a solid state current distribution system according to claim 21.

YORK in view of ISHIKAWA is silent as to printed circuit board being provided with a connector for interfacing with an external computer, or having a heat dissipator associated with the solid state switch or the exact configurations of the copper support bars.

The Examiner takes official notice. The art of packaging a high power module with the intent to have heat removed from hot spots within the module are well known and understood. It is also well known that copper support bars are inherently good heat conductors.

It would have been obvious to one having ordinary skill in the art at the time of this invention to provide the connector interfaces to satisfy the requirements of the system, it also would be obvious to configure and to design a configuration to satisfy the thermal requirements for the module design. The motivation would be to have a means

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to connect an external test equipment to the device to trouble shoot the solid state device and to provide a module that would not overheat.

Regarding claim 33.

YORK in view of ISHIKAWA disclose the solid state current distribution system according to claim 21.

It is obvious that the solid state circuit breaker disclosed is intended for industrial applications.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over YORK 3,851,218 in view of ISHIKAWA 4,801,828 in further view of DiSalvo US 2004/0184207.

Regarding claim 25.

YORK in view of ISHIKAWA disclose the solid state current distribution system according to claim 21 and also teaches that the solid state circuit breaker does not require resetting under normal operation (column 1, lines 33-35).

YORK in view of ISHIKAWA does not disclose a reset connection to the electronic solid state switch for a manual resetting of the system.

DiSalvo discloses a circuit breaker with independent trip and reset used to test the operation of the circuit breaker.

It would have been obvious to one having ordinary skill in the art at the time of this invention to modify the teachings of YORK in view of ISHIKAWA to include a manual reset. The motivation would be to provide a manual test mode to test the operation of the solid state circuit breaker.

Claims 26, 28, 36, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over YORK 3,851,218 in view of ISHIKAWA 4,801,828 in further view of PORTER 5,170,360

Regarding claims 26, 36, 40.

YORK in view of ISHIKAWA disclose the solid state current distribution system according to claim 21

YORK in view of ISHIKAWA does not disclose a micro controller and a memory programmed for system management and recording parameters.

PORTER discloses a circuit breaker system uses a microprocessor for controlling the breaker system (abstract).

It would have been obvious to one having ordinary skill in the art at the time of this invention to modify the solid state circuit breaker to have a micro processor provide the current control and the timing to the solid state breaker. The motivation would be to provide more flexibility to the control of the solid state circuit breaker system.

Regarding claim 28.

YORK in view of ISHIKAWA in further view of PORTER discloses a solid state current distribution system according to claim 26.

The above references do not disclose an arrangement wherein the module is configured as a module connectable in a parallel mode with one or more similar modules.

The Examiner takes official notice. A power bus when configured to supply power to a plurality of units, the units are arranged in a parallel configuration.

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It would have been obvious to one having ordinary skill to configure a parallel mode with one or more similar modules. The motivation would be to provide independent protection to each of the parallel modules.

Any inquiry concerning this communication should be directed to Robert L. DeBeradinis whose number is (571) 272-2049. The Examiner can normally be reached Monday-Friday from 8:30 am to 5:00 pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Brian Sircus, can be reached on (571) 272-2058. The Fax phone number for this Group is (703) 872-9306.

RLD

OCTOBER 6, 2004



ROBERT L. DEBERADINIS
PRIMARY EXAMINER